

UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Egbert Classen
Application Number: 10/575,613
Filing Date: 04/11/2006
Group Art Unit: 1714
Examiner: Eric Wayne Golightly
Title: METHOD AND APPARATUS FOR CONTROLLING THE
SUPPLY OF CLEANING FLUID IN A WASHING PROCESS

Mail Stop Appeal Brief - Patents

Commissioner for Patents

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REPLY BRIEF

Pursuant to 37 CFR 41.41, Appellant hereby files a reply brief in response to the Examiner's Answer dated August 22, 2011, in the above-identified application, within the 2-month reply deadline.

Please charge Deposit Account No. 502786 for any deficiency or overpayment.

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(1) REAL PARTY IN INTEREST

The real party in interest is BSH Bosch und Siemens Hausgeräte GmbH.

(2) RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) STATUS OF CLAIMS

Claims 11-25 are pending in the present application. Claims 1-10 were canceled. The final rejections of claims 11-25 are being appealed.

Claims 11, 15, and 23 are independent.

(4) STATUS OF AMENDMENTS

There are no outstanding Amendments.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

An exemplary embodiment of the present invention, as recited by, for example, independent claim 11, is directed to an appliance operable to carry out at least one cleaning process using cleaning liquid (see, e.g., paragraph [001]), the appliance comprising:

an assembly for placing into contact with one another a cleaning liquid and at least one item to be cleaned (see, e.g., paragraph [008]); and

a system for supplying cleaning agent into the cleaning liquid, the system including a sensor that determines the content of washing-active substances in the cleaning liquid during the cleaning process and a dosing device that alternately supplies additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid in the event that the content of washing-active substances is above a predetermined upper value (see, e.g., paragraphs [001], [008] - [011], [013], [018] - [020]).

In this manner, the present invention determines the content of washing-active substances in the cleaning liquid continuously during the cleaning process and, on this basis, regulates the addition of cleaning agents to the cleaning liquid independently of influences such as the degree of contamination, temperature and water hardness in order to achieve the optimal content of washing active substances in the cleaning liquid. Thus, both under-dosing with inadequate cleaning effect and also over-dosing with negative economical and ecological consequences can be avoided. In this way, the cleaning performance and the consumption of resources are optimised and the environmental influences are minimized. See, e.g., paragraphs [010], [012], [013], [019], [020].

Claim 12 depends from claim 11 and recites wherein the system for supplying cleaning agent to the cleaning liquid is regulated as a function of the content of washing-active substances in the cleaning liquid determined by the sensor by means of an electronic control. See, e.g., paragraphs [011], [018] - [020].

Claim 13 depends from claim 11 and recites wherein the sensor is a tenside sensor that determines a content of tensides in the cleaning liquid by means of a bubble pressure method. See, e.g., paragraphs [014], [015], [017], [018].

Claim 14 depends from claim 13 and recites wherein the tenside sensor in the appliance is surrounded by cleaning liquid as continuously as possible during the cleaning process. See, e.g., paragraph [020].

An exemplary embodiment of the present invention, as recited by, for example, independent claim 15, is directed to method for operating an appliance operable to carry out at least one cleaning process using cleaning liquid, the method comprising the steps of:

determining a content in a cleaning liquid of washing-active substances that are supplied therinto via a supply of cleaning agent into the cleaning liquid by a cleaning agent supply system (see, e.g., paragraphs [006], [008] - [011], [014], [017] - [020]);

supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be below a predetermined lower value (see, e.g., paragraphs [001], [008] - [015], [018], [020]); and

supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value (see, e.g., paragraphs [008], [013], [018]).

Claim 16 depends from claim 15 and recites wherein the content of washing-active substances in the cleaning liquid is determined by a selected one of continuously determining the content of washing-active substances in the cleaning liquid during the at least one cleaning process (see, e.g., paragraphs [006], [008] - [011], [014], [017] - [020]) and determining the content of washing-active substances in the cleaning liquid at short time intervals during the at least one cleaning process (see, e.g., paragraph [020]).

Claim 17 depends from claim 15 and recites wherein determining the content of washing-active substances in the cleaning liquid includes determining the content of washing-active substances in the cleaning liquid via electronic means. See, e.g., paragraphs [011], [018] - [020].

Claim 18 depends from claim 15 and recites wherein determining the content of washing-active substances in the cleaning liquid includes determining the content of washing-active substances in the cleaning liquid via a sensor. See, e.g., paragraphs [001], [008] - [011], [013], [018] - [020].

Claim 19 depends from claim 18 and recites wherein at least part of the cleaning process is repeated depending on the content of washing-active substances in the cleaning liquid via the sensor. See, e.g., paragraph [021].

Claim 20 depends from claim 18 and recites wherein a selected one of omission of at least part of the cleaning process and interruption of at least part of the cleaning process is undertaken depending on the content of washing-active substances in the cleaning liquid determined by the sensor. See, e.g., paragraph [022].

Claim 21 depends from claim 11 and recites and further comprising a device for displaying values relating to the content of washing-active substances in the cleaning liquid determined by the sensor, whereby an operator can add cleaning agents during the cleaning operation on the basis of an indicated concentration. See, e.g., paragraph [018].

Claim 22 depends from claim 21 and recites wherein the device for displaying values relating to the content of washing-active substances in the cleaning liquid determined by the sensor includes a component for generating an acoustic signal. See, e.g., paragraph [018].

An exemplary embodiment of the present invention, as recited by, for example, independent claim 23, is directed to method for operating an appliance that carries out at least one cleaning process using a cleaning liquid, the method comprising:

- supplying a cleaning agent having washing-active substances into the cleaning liquid via a cleaning agent supply system (see, e.g., paragraphs [001], [008] - [015], [018], [020]);

- determining a content of the washing-active substances in the cleaning liquid using a sensor and comparing the content of the washing-active substances to a predetermined lower value and a predetermined upper value (see, e.g., paragraphs [006], [008] - [011], [014], [017] - [020]);

- supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process when the content of washing-active substances is below the predetermined lower value (see, e.g., paragraphs [001], [008] - [015], [018], [020]); and

supplying fresh water to the cleaning liquid during the at least one cleaning process when the content of washing-active substances above the predetermined upper value (see, e.g., paragraphs [008], [013], [018]).

Claim 24 depends from claim 23 and recites wherein the determining the content of the washing-active substances in the cleaning liquid and the comparing the content of the washing-active substances to the predetermined lower value and the predetermined upper value includes continuously determining the content of the washing-active substances in the cleaning liquid during the at least one cleaning process (see, e.g., paragraphs [006], [008] - [011], [014], [017] - [020]) and comparing the content of the washing-active substances to the predetermined lower value and the predetermined upper value during the at least one cleaning process (see, e.g., paragraph [008]).

Claim 25 depends from claim 23 and recites wherein the determining the content of the washing-active substances in the cleaning liquid and the comparing the content of the washing-active substances to the predetermined lower value and the predetermined upper value includes determining the content of the washing-active substances in the cleaning liquid during the at least one cleaning process at short time intervals and comparing the content of the washing-active substances to the predetermined lower value and the predetermined upper value during the at least one cleaning process (see, e.g., paragraphs [006], [008] - [011], [014], [017] - [020]).

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- a. Whether claims 11-14 are anticipated under 35 U.S.C. § 102(b) by the Buttner et al. reference (GB 2052251 A).
- b. Whether claims 15-20 and 23-25 are unpatentable under 35 U.S.C. § 103(a) over the Buttner et al. reference.

- c. Whether claims 21 and 22 are unpatentable under 35 U.S.C. § 103(a) over the Buttner et al. reference in view of the Livingston et al. reference (U.S. Patent No. 4,509,543).

(7) ARGUMENT

- a. Claims 11-14 are NOT anticipated under 35 U.S.C. § 102(b) by the Buttner et al. reference (GB 2052251 A).

Claims 11-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by the Buttner et al. reference (GB 2052251 A).

Appellant respectfully requests reversal of this rejection.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. [...] The identical invention must be shown in as complete detail as is contained in the ... claim." M.P.E.P. § 2131.

The Buttner et al. reference does not explicitly disclose "**a dosing device that alternately supplies additional cleaning agent** to the cleaning liquid in the event that the sensed content of washing-active substances is below a predetermined lower value **and supplies fresh water to the cleaning liquid** during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value," as recited by independent claim 11.

As explained above, these features are important for avoiding **both under-dosing** with inadequate cleaning effect **and also over-dosing** with negative economical and ecological consequences. In this way, the cleaning performance and the consumption of resources are

optimised and the environmental influences are minimized. See, e.g., page 3, lines 25-30, and page 4, lines 1-5.

The Buttner et al. reference discloses controlling at least one of the volume of water supplied to the machine, the number of changes of such water and the metering of at least one additive. The Buttner et al. reference does not explicitly disclose “a dosing device that [...] supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value,” as recited by independent claim 11.

Instead, the Buttner et al. reference describes “metering” the at least one additive, not “metering” the supply of water. See, e.g., Abstract; page 1, line 94; page 2, lines 107 and 120-121. This appears to show a distinction between the manner in which the additive is controlled and the manner in which the volume of water is controlled. Similarly, when describing the water, the Buttner et al. reference generally refers to controlling how many rinsing operations are needed. See, e.g., Abstract; page 1, lines 126-127; page 2, lines 90-92. Hence, the Buttner et al. reference appears to be referencing individual rinsing cycles when describing controlling at least one of the volume of water supplied to the machine and the number of changes of such water.

As explained above, the Buttner et al. reference does not explicitly disclose “a dosing device that alternately supplies additional cleaning agent to the cleaning liquid in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value,” as recited by independent claim 11.

The Examiner’s Answer dated August 22, 2011, asserts that the claims:

“[...] are drawn to an apparatus, thus a recitation of the intended use of the claimed invention must result in a structural difference between the

claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. [...] Here, Buttner expressly teaches "the steps of measuring at least one of the surface tension, water hardness, and electrical conductivity of washing liquid for the machine with the aid of measuring means of the machine and so controlling the machine program by electrical control means in dependence on such measurement as to control at least one of the volume of water supplied to the machine, the number of changes or such water, and the metering of at least one additive" (Page 1, lines 85-94). Therefore, the dosing device is fully capable of supplying fresh water to the cleaning liquid in the event that the content of washing-active substances is above a predetermined upper value."

Contrary to the assertions in the Examiner's Answer, Appellant respectfully submits that the features of "**a dosing device that alternately supplies additional cleaning agent to the cleaning liquid** in the event that the sensed content of washing-active substances is below a predetermined lower value **and supplies fresh water to the cleaning liquid** during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value," as recited by independent claim 11, are not directed to intended use. Rather, Appellant respectfully submits that these features define the structure and function of the "dosing device."

Appellant respectfully submits that these features denote an actual state of the dosing device that fundamentally ties the function of alternately supplying additional cleaning agent to the cleaning liquid in the event that the sensed content of washing-active substances is below a predetermined lower value and supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value to the physical characteristics of the dosing device. As a

result, the disputed claim language reaches well beyond merely describing an intended use since the claims actively recite an actual state of the dosing device.

Moreover, Appellant respectfully submits that one of ordinary skill in the art would not interpret the phrase “**that alternately supplies additional cleaning agent to the cleaning liquid** in the event that the sensed content of washing-active substances is below a predetermined lower value **and supplies fresh water to the cleaning liquid** during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value” as merely denoting an intended use. Similarly, Appellant found no evidence or reasoning supporting this position in the claims, specification, prosecution history and extrinsic evidence.

M.P.E.P. § 2173.05(g) states:

A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. [...] A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.

The Office Action has not established or provided any support for a dosing device that is capable of **alternately supplying** additional cleaning agent [...] and **supplying** fresh water to the cleaning liquid, as claimed. As explained above, when describing the water, the Buttner

et al. reference generally refers to controlling how many rinsing operations are needed. See, e.g., Abstract; page 1, lines 126-127; page 2, lines 90-92. Hence, the Buttner et al. reference appears to simply reference individual rinsing cycles when describing controlling at least one of the volume of water supplied to the machine and the number of changes of such water.

Appellant respectfully submits that a device that merely supplies water for a rinsing cycle is not the same as or comparable to “a dosing device that alternately supplies additional cleaning agent to the cleaning liquid in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value,” as recited by independent claim 11. As explained above, the Buttner et al. reference does not explicitly disclose these features, and therefore, does not anticipate claim 11.

The Examiner's Answer dated August 22, 2011, further states:

It is noted that the claims rejected under the first ground of rejection do not require metering the supply of water. Claim 11, for example, recites "supplies fresh water ... in the event that the content of washing-active substances is above a predetermined upper value". Thus, the claims teach the broad step of "supplying", and that the supplying be performed when the washing-active substances are above a certain value, but do not require that the supplying be metered. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Appellant respectfully submits that Appellant's remarks with respect to "metering" were directed to the teachings of the Buttner et al. reference in response to the assertions set

forth in the text of the rejection in the Office Action. Appellant has not asserted that claim 11 recites "metering." Rather, Appellant pointed out that claim 11 recites "a dosing device that alternately supplies additional cleaning agent to the cleaning liquid in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value."

The Examiner's Answer dated August 22, 2011, further states:

"It appears that the appellants may be arguing that the steps of the applied art are not performed "during the cleaning process" as in claim 11, line 7, since they are, allegedly, performed during a rinsing process. If this is what is meant, then the position of the Examiner is that the rinsing process is part of the cleaning process.

Appellants may view the "cleaning process" as only that part of the process wherein a cleaning agent (other than water) is supplied to items to be cleaned, but this narrow interpretation of "cleaning process" is not required in the claims, nor does the specification require that "cleaning process" be so narrowly defined. A broad yet reasonable interpretation of "cleaning process" is a whole process that includes applying an agent, rinsing, drying, etc. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)."

Contrary to these assertions, Appellant respectfully submits that the present application does not refer to the "cleaning process" as including the rinsing and drying processes, as alleged by the Office. When properly considered as a whole, one of ordinary

skill in the art would not refer to the “cleaning process” as including the rinsing and drying processes, as alleged by the Office. Appellant found no evidence or reasoning supporting this position in the claims, specification, prosecution history and extrinsic evidence.

M.P.E.P. § 2111 states that:

During patent examination, the pending claims must be "given their **broadest reasonable interpretation consistent with the specification.**" >The Federal Circuit's en banc decision in *Phillips v.*

AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard:

The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "**in light of the specification as it would be interpreted by one of ordinary skill in the art.**" *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "**conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.**" 37 CFR 1.75(d)(1).

Emphasis added Appellant.

Claim 11 recites “a system for supplying cleaning agent into the cleaning liquid, the system including a sensor that determines the content of washing-active substances in the cleaning liquid during the cleaning process and a dosing device that alternately supplies additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid in the event that the content of washing-active substances is above a predetermined upper value.”

When properly considered as a whole and in context with the specification and claims, the term “cleaning process” clearly is NOT referring to an overall “cleaning process” that includes the rinsing and drying processes, as alleged by the Office. Indeed, the claimed “sensor” and “dosing device” are not directed to a rinsing or drying process. Appellant respectfully submits that such an overly broad interpretation is inconsistent with the use of the term in the specification and claims.

For example, the present application explains that one or more “cleaning processes” are carried out in the course of a cleaning program. See, e.g., paragraphs [002], [003]. The present application also separately references a “cleaning program” and a “rinsing program.” See, e.g., paragraphs [009] at page 3, lines 21-22; paragraph [010] at page 4, lines 2-5.

Thus, when properly considered as a whole and in context with the specification and claims, the term “cleaning process” clearly is NOT referring to an overall “cleaning process” that includes the rinsing and drying processes, as alleged by the Office.

For at least the foregoing reasons, the Buttner et al. reference does not disclose all of the features of independent claim 11.

Claims 12-14 are patentable over the Buttner et al. reference by virtue of their dependency from claim 11, as well as for the additional features recited therein.

Appellant respectfully requests withdrawal of this rejection.

- b. Claims 15-20 and 23-25 are NOT unpatentable under 35 U.S.C. § 103(a) over the Buttner et al. reference.

Claims 15-20 and 23-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Buttner et al. reference.

Appellant respectfully traverses this rejection.

Regarding independent claims 15 and 23, the final Office Action dated March 9, 2010 (e.g., at page 4, numbered paragraph 12, page 6, numbered paragraph 19) acknowledges that the Buttner et al. reference teaches that the controller uses the measured content of washing-active substances in the liquid to control the volume of water supplied to the washing machine and the number of changes of the water (Page 1, lines 82-100; page 2, lines 21-35, 96-107). The Office Action alleges that “[i]t is reasonably expected that this water is fresh water.” The Office Action acknowledges that the Buttner et al. reference “does not expressly disclose that this water is supplied in the event that the content of washing-active substances is determined to be above a predetermined upper value.” However, the Office Action alleges that “it would have been obvious to one of ordinary skill to supply additional water to the cleaning liquid to correct a potential overdosing of cleaning agent with a reasonable expectation of success (MPEP 2143 E).”

Contrary to the assertions in the Office Action, Appellant respectfully submits that the Buttner et al. reference clearly does not disclose all of the method steps defined by independent claims 15 and 23.

For example, the Buttner et al. reference does not teach or suggest “supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value,” as recited in claim 15.

Moreover, the Buttner et al. reference does not teach or suggest “supplying fresh water to the cleaning liquid during the at least one cleaning process when the content of washing-active substances above the predetermined upper value,” as recited in claim 23.

The Buttner et al. reference is silent with respect to adding water during the cleaning process. Instead, the Buttner et al. reference simply describes “metering” the at least one additive, not “metering” the supply of water. See, e.g., Abstract; page 1, line 94; page 2, lines 107 and 120-121. When describing the water, the Buttner et al. reference generally refers to controlling how many rinsing operations are needed. See, e.g., Abstract; page 1, lines 126-127; page 2, lines 90-92. Hence, the Buttner et al. reference appears to be referencing individual rinsing cycles when describing controlling at least one of the volume of water supplied to the machine and the number of changes of such water, not to the cleaning process as claimed.

Furthermore, contrary to the assertions in the final Office Action, Appellant respectfully submits that one of ordinary skill in the art will not have an apparent reason to supply additional water to the cleaning liquid during the at least one cleaning process to correct a potential overdosing of cleaning agent with any reasonable expectation of success.

First, as explained above, the Buttner et al. reference discloses controlling at least one of the volume of water supplied to the machine, the number of changes of such water and the metering of at least one additive. The Buttner et al. reference does not explicitly disclose that water is added during the cleaning process. Thus, the Buttner et al. reference fails to provide any teaching or suggestion to one of ordinary skill in the art to add water during the cleaning process.

Second, the Buttner et al. reference describes “metering” the at least one additive, but does not mention “metering” the supply of water. This appears to show a distinction between the manner in which the additive is controlled and the manner in which the volume of water is controlled. Similarly, when describing the water, the Buttner et al. reference generally refers to controlling how many rinsing operations are needed. Hence, the Buttner et al. reference

appears to be referencing individual rinsing cycles when describing controlling at least one of the volume of water supplied to the machine and the number of changes of such water, *not* “supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value,” as recited in claim 15, or “supplying fresh water to the cleaning liquid during the at least one cleaning process when the content of washing-active substances above the predetermined upper value,” as recited in claim 23.

The Response to Arguments of the final Office Action (at page 10, numbered paragraph 31) asserts that the control system “is fully capable of supplying fresh water to the cleaning liquid during the washing cycle,” and therefore, that it allegedly “would have been obvious to one of ordinary skill in the art to modify Buttner to include supplying fresh water to the cleaning liquid during the washing cycle in the event that the content of washing-active substances is above the optimum value.”

Contrary to these assertions, the Buttner et al. reference does not provide any teaching that suggests that the disclosed control system supplies, or is capable of supplying, fresh water to the cleaning liquid during the washing cycle.

Moreover, Appellant respectfully submits that one of ordinary skill in the art will not have an apparent reason to supply fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value, as recited in claim 15, or supply fresh water to the cleaning liquid during the at least one cleaning process when the content of washing-active substances above the predetermined upper value, as recited in claim 23. Furthermore, the Buttner et al. reference teaches away from the claimed invention.

The Buttner et al. reference discloses that the pH-value drops during the course of the washing program. The Buttner et al. reference is concerned with ensuring that the pH-value is brought up to (i.e., increased or maintained at) a desired level. See, e.g., page 2, lines 21-39. Hence, one of ordinary skill in the art would not have an apparent reason to modify the Butler

et al reference in the manner alleged, or a reasonable expectation of success in modifying the Buttner et al. reference, to supply additional water to the cleaning liquid, as alleged. Appellant respectfully submits that it would not have been obvious to add additional water, which would further reduce the pH-value, when the Buttner et al. reference is concerned with ensuring that the pH-value is brought up to (i.e., increased or maintained at) a desired level. Indeed, the teachings of the Buttner et al. reference teach away from reducing the pH-value, which is the predictable result of supplying additional water to the cleaning liquid.

M.P.E.P. § 2145(X)(D)(2) states that it is improper to combine references where the references teach away from their combination. In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Thus, one of ordinary skill in the art would not have an apparent reason to modify the Butler et al reference to add the rinsing step during the washing process since this would cause the pH-value to be lower, thereby requiring the addition of larger amounts of additive to raise the washing agent concentration to the desired level (pH-value).

For at least the foregoing reasons, independent claims 15 and 23 are patentable over the Buttner et al. reference.

The Examiner's Answer dated August 22, 2011, states:

"It appears that the appellants may be arguing that the steps of the applied art are not performed "during the cleaning process" as in claim 11, line 7, since they are, allegedly, performed during a rinsing process. If this is what is meant, then the position of the Examiner is that the rinsing process is part of the cleaning process.

Appellants may view the "cleaning process" as only that part of the process wherein a cleaning agent (other than water) is supplied to items to be cleaned, but this narrow interpretation of "cleaning process" is not required in the claims, nor does the specification

require that "cleaning process" be so narrowly defined. A broad yet reasonable interpretation of "cleaning process" is a whole process that includes applying an agent, rinsing, drying, etc. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)."

Contrary to these assertions, Appellant respectfully submits that the present application does not refer to the "cleaning process" as including the rinsing and drying processes, as alleged by the Office. When properly considered as a whole, one of ordinary skill in the art would not refer to the "cleaning process" as including the rinsing and drying processes, as alleged by the Office. Appellant found no evidence or reasoning supporting this position in the claims, specification, prosecution history and extrinsic evidence.

M.P.E.P. § 2111 states that:

During patent examination, the pending claims must be "given their **broadest reasonable interpretation consistent with the specification.**" >The Federal Circuit's en banc decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard: The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "**in light of the specification as it would be interpreted by one of ordinary skill in the art.**" *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004).

Indeed, the rules of the PTO require that application claims must **"conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description."** 37 CFR 1.75(d)(1).

Emphasis added Appellant.

Claim 15 recites a "method for operating an appliance operable to carry out at least one cleaning process using cleaning liquid, the method comprising the steps of: determining a content in a cleaning liquid of washing-active substances that are supplied therinto via a supply of cleaning agent into the cleaning liquid by a cleaning agent supply system; supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be below a predetermined lower value; and supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value."

When properly considered as a whole and in context with the specification and claims, the term "cleaning process" clearly is NOT referring to an overall "cleaning process" that includes the rinsing and drying processes, as alleged by the Office. Indeed, the claimed steps of "supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be below a predetermined lower value; and supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value" are not directed to a rinsing or drying process.

Appellant respectfully submits that such an overly broad interpretation is inconsistent with the use of the term in the specification and claims.

For example, as explained above, the present application explains that one or more “cleaning processes” are carried out in the course of a cleaning program. See, e.g., paragraphs [002], [003]. The present application also separately references a “cleaning program” and a “rinsing program.” See, e.g., paragraphs [009] at page 3, lines 21-22; paragraph [010] at page 4, lines 2-5.

Thus, when properly considered as a whole and in context with the specification and claims, the term “cleaning process” clearly is NOT referring to an overall “cleaning process” that includes the rinsing and drying processes, as alleged by the Office.

The Examiner's Answer dated August 22, 2011, further states:

“[...] the claims do not require metering the supply of water. Claim 15, for example, recites “supplying fresh water ... in the event that the content of washing-active substances is above a predetermined upper value”. Thus, the claims teach the broad step of “supplying”, and that the supplying be performed when the washing-active substances are above a certain value, but do not require that the supplying be metered. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).”

Appellant respectfully submits that Appellant’s remarks with respect to “metering” were directed to the teachings of the Buttner et al. reference in response to the assertions set forth in the text of the rejection in the Office Action. Appellant has not asserted that claim 11 recites “metering.” Rather, Appellant pointed out that claim 11 recites “a dosing device that alternately supplies additional cleaning agent to the cleaning liquid in the event that the sensed

content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value.”

The Examiner's Answer dated August 22, 2011, also states:

The position of the Examiner is that the applied art does disclose a control system which is fully capable of performing this function (see, e.g., Buttner at page 1, lines 6-8 and 89-94 and claim 1).

Contrary to these assertions, Appellant respectfully submits that the Buttner et al. reference does not disclose a step of “supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be below a predetermined lower value; and supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value” as recited in claim 15. Moreover, the Buttner et al. reference does not disclose a control system that is capable of performing these method steps.

The Office Action has not established or provided any support for the claimed method steps. As explained above, when describing the water, the Buttner et al. reference generally refers to controlling how many rinsing operations are needed. See, e.g., Abstract; page 1, lines 126-127; page 2, lines 90-92. Hence, the Buttner et al. reference appears to simply reference individual rinsing cycles when describing controlling at least one of the volume of water supplied to the machine and the number of changes of such water.

Appellant respectfully submits that a device that merely supplies water for a rinsing cycle is not the same as or comparable to a step of “supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be below a predetermined lower value; and

supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value" as recited in claim 15.

Appellant respectfully submits that these features are not an obvious variation of the teachings of the Buttner et al. reference and would not be obvious to try based on the teachings of these references and without the benefit of the teachings of the present invention.

The Examiner's Answer dated August 22, 2011, further states:

Initially, the position of the Examiner is that Buttner does not teach away from adding water based on an upper value of washing-active substances since Buttner does not teach that adding water based on an upper value of washing-active substances is bad. Neither silence, nor a teaching to ensure enough pH, amounts to a teaching away from avoiding a pH that is too high.

Indeed, Buttner suggests adding water to the cleaning liquid by disclosing the desirability of achieving and "optimum" concentration, i.e. not too dilute and not too concentrated, and by disclosing "controlling" the water supply, i.e. stopping supply or increasing supply, to adjust various physical properties of the liquid. Regarding teaching an optimum concentration, Buttner, for example, discloses avoiding a cleaning liquid that is too concentrated by discussing an "optimum" concentration of washing agent (see, e.g. Buttner at page 1, lines 43*-47, 56-58, and 121-126 and page 2, lines 15-18, 25, 26, 30-33, 58, 59 and 78-81). Since there are only two ways in which an avoidance of over concentration can be avoided, i.e. a) not adding too much washing agent and b) adding more water, Buttner at least

suggests to a skilled artisan adding water in order to achieve the optimum concentration.

This suggestion is even more so revealed in the Buttner disclosure to control the water supply. Note that Buttner teaches that the washing agent/water concentration is a factor for three physical properties of the cleaning solution, i.e. water hardness (see Buttner at page 1, lines 36-42), surface tension (see Buttner at page 1, lines 95-99) and electrical conductivity (see Buttner at page 1, lines 95-99), as well as the pH (see Buttner at page 1, lines 95-99). Next, Buttner teaches controlling the water supply due to these physical properties (see Buttner at page 1, lines 86-94). Since "control" suggests not only stopping water supply to adjust these physical properties that have strayed too far one way, but also increasing water supply to adjust these physical properties that have strayed too far the other way, the Buttner disclosure suggests adding water.

Contrary to these assertions, Appellant respectfully submits that the teachings of the Buttner et al. reference teach away from reducing the pH-value, which is the predictable result of supplying additional water to the cleaning liquid.

M.P.E.P. § 2145(X)(D)(2) states that it is improper to combine references where the references teach away from their combination. In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

As explained above, the Buttner et al. reference discloses that the pH-value drops during the course of the washing program. The Buttner et al. reference is concerned with ensuring that the pH-value is brought up to (i.e., increased or maintained at) a desired level. See, e.g., page 2, lines 21-39. Hence, one of ordinary skill in the art would not have an apparent reason to modify the Butler et al reference in the manner alleged, or a reasonable

expectation of success in modifying the Buttner et al. reference, to supply additional water to the cleaning liquid, as alleged. Indeed, these features are not an obvious variation of the teachings of the Buttner et al. reference and would not be obvious to try based on the teachings of these references and without the benefit of the teachings of the present invention.

Appellant respectfully submits that it would not have been obvious to add additional water, which would further reduce the pH-value, when the Buttner et al. reference is concerned with ensuring that the pH-value is brought up to (i.e., increased or maintained at) a desired level.

With respect to the assertions regarding the Buttner et al. reference providing or suggesting control, Appellant respectfully submits that the Buttner et al. reference only suggests providing control by ensuring that the pH-value is brought up to (i.e., increased or maintained at) a desired level. The Buttner et al. reference does not provide any suggestion of additional control for reducing the pH-value.

The teachings of the Buttner et al. reference teach away from providing control by supplying additional water to the cleaning liquid, since the predictable result of supplying additional water is reducing the pH-value. Thus, one of ordinary skill in the art would not have an apparent reason to modify the Butler et al reference to add the rinsing step during the washing process since this would cause the pH-value to be lower, thereby requiring the addition of larger amounts of additive to raise the washing agent concentration to the desired level (pH-value).

With respect to the traversal argument directed to the assertions of selection of any order of performing process steps, Appellant respectfully submits that these traversal arguments were directed to assertions in the non-final Office Action dated October 1, 2009. Since these statements were not present in the final Office Action dated March 9, 2010, this Reply Brief does not include Appellant's response to these assertions.

For at least the foregoing reasons, Appellant respectfully submits that these features are not an obvious variation of the teachings of the Buttner et al. reference and would not be

obvious to try based on the teachings of these references and without the benefit of the teachings of the present invention, and independent claims 15 and 23 are patentable over the Buttner et al. reference.

Claims 16-20 and 24-25 are patentable over the Buttner et al. reference by virtue of their dependencies from claims 15 and 23, respectively, as well as for the additional features recited therein.

Appellant respectfully requests withdrawal of this rejection.

- c. Claims 21 and 22 are NOT unpatentable under 35 U.S.C. § 103(a) over the Buttner et al. reference in view of the Livingston et al. reference (U.S. Patent No. 4,509,543).

Claims 21 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Buttner et al. reference in view of the Livingston et al. reference (U.S. Patent No. 4,509,543).

Appellant respectfully traverses this rejection.

The Livingston et al. reference does not make up for the deficiencies of the Buttner et al. reference with respect to claim 11, from which claims 21 and 22 depend.

The Livingston et al. reference clearly does not disclose “a dosing device that alternately supplies additional cleaning agent to the cleaning liquid in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value,” as recited by independent claim 11.

The Office Action does not rely on the Livingston et al. reference for these features of claim 11.

Thus, none of the applied references discloses or suggests the subject matter defined by independent claim 11. Claims 21 and 22 are patentable over the Buttner et al. reference

and the Livingston et al. reference by virtue of their dependency from claim 11, as well as for the additional features recited therein.

Appellant respectfully requests reversal of this rejection.

(8) CONCLUSION

In view of the foregoing discussion, Appellant respectfully requests reversal of the Examiner's rejections.

Respectfully submitted,

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CLAIMS APPENDIX

1 - 10 (Canceled)

11. (Rejected) An appliance operable to carry out at least one cleaning process using cleaning liquid, the appliance comprising:
an assembly for placing into contact with one another a cleaning liquid and at least one item to be cleaned; and
a system for supplying cleaning agent into the cleaning liquid, the system including a sensor that determines the content of washing-active substances in the cleaning liquid during the cleaning process and a dosing device that alternately supplies additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid in the event that the content of washing-active substances is above a predetermined upper value.
12. (Rejected) The appliance according to claim 11, wherein the system for supplying cleaning agent to the cleaning liquid is regulated as a function of the content of washing-active substances in the cleaning liquid determined by the sensor by means of an electronic control.
13. (Rejected) The appliance according to claim 11, wherein the sensor is a tenside sensor that determines a content of tensides in the cleaning liquid by means of a bubble pressure method.

14. (Rejected) The appliance according to claim 13, wherein the tenside sensor in the appliance is surrounded by cleaning liquid as continuously as possible during the cleaning process.
15. (Rejected) A method for operating an appliance operable to carry out at least one cleaning process using cleaning liquid, the method comprising the steps of:
determining a content in a cleaning liquid of washing-active substances that are supplied thereto via a supply of cleaning agent into the cleaning liquid by a cleaning agent supply system;
supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be below a predetermined lower value; and
supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value.
16. (Rejected) The method for operating an appliance according to claim 15, wherein the content of washing-active substances in the cleaning liquid is determined by a selected one of continuously determining the content of washing-active substances in the cleaning liquid during the at least one cleaning process and determining the content of washing-active substances in the cleaning liquid at short time intervals during the at least one cleaning process.
17. (Rejected) The method for operating an appliance according to claim 15, wherein determining the content of washing-active substances in the cleaning liquid includes determining the content of washing-active substances in the cleaning liquid via electronic means.

18. (Rejected) A method for operating an appliance according to claim 15, wherein determining the content of washing-active substances in the cleaning liquid includes determining the content of washing-active substances in the cleaning liquid via a sensor.
19. (Rejected) The method for operating an appliance according to claim 18, wherein at least part of the cleaning process is repeated depending on the content of washing-active substances in the cleaning liquid via the sensor.
20. (Rejected) The method for operating an appliance according to claim 18, wherein a selected one of omission of at least part of the cleaning process and interruption of at least part of the cleaning process is undertaken depending on the content of washing-active substances in the cleaning liquid determined by the sensor.
21. (Rejected) The appliance according to claim 11 and further comprising a device for displaying values relating to the content of washing-active substances in the cleaning liquid determined by the sensor, whereby an operator can add cleaning agents during the cleaning operation on the basis of an indicated concentration.
22. (Rejected) The appliance according to claim 21, wherein the device for displaying values relating to the content of washing-active substances in the cleaning liquid determined by the sensor includes a component for generating an acoustic signal.

23. (Rejected) A method for operating an appliance that carries out at least one cleaning process using a cleaning liquid, the method comprising:
supplying a cleaning agent having washing-active substances into the cleaning liquid via a cleaning agent supply system;
determining a content of the washing-active substances in the cleaning liquid using a sensor and comparing the content of the washing-active substances to a predetermined lower value and a predetermined upper value;
supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process when the content of washing-active substances is below the predetermined lower value; and
supplying fresh water to the cleaning liquid during the at least one cleaning process when the content of washing-active substances above the predetermined upper value.
24. (Rejected) The method of claim 23, wherein the determining the content of the washing-active substances in the cleaning liquid and the comparing the content of the washing-active substances to the predetermined lower value and the predetermined upper value includes continuously determining the content of the washing-active substances in the cleaning liquid during the at least one cleaning process and comparing the content of the washing-active substances to the predetermined lower value and the predetermined upper value during the at least one cleaning process.
25. (Rejected) The method of claim 23, wherein the determining the content of the washing-active substances in the cleaning liquid and the comparing the content of the washing-active substances to the predetermined lower value and the predetermined upper value includes determining the content of the washing-active substances in the cleaning liquid during the at least one cleaning process at short time intervals and

comparing the content of the washing-active substances to the predetermined lower value and the predetermined upper value during the at least one cleaning process.

EVIDENCE APPENDIX

None

RELATED APPEALS APPENDIX

None